

37. The patient infusion system of claim 34 wherein the communication link comprises means for transmitting and receiving electromagnetic energy through a window in the shielded room.

38. The patient infusion system of claim 37 wherein the electromagnetic energy comprises infrared electromagnetic energy.

31 39. The patient infusion system of claim 37 wherein the electromagnetic energy comprises electromagnetic energy in the visual range.

40. The patient infusion system of claim 34 wherein the communication link comprises means for transmitting and receiving electromagnetic energy.

41. The patient infusion system of claim 40 wherein the electromagnetic energy comprises infrared electromagnetic energy.

42. The patient infusion system of claim 40 wherein the electromagnetic energy comprises electromagnetic energy in the visual range.

43. The patient infusion system of claim 26, further comprising a battery charger positioned external to the shielded room for recharging batteries depleted of charge by the injector.

44. The patient infusion system of claim 43 wherein the battery charger is operably associated with the system controller.

45. A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

81 an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus operable to inject fluid into a patient during a magnetic resonance imaging procedure;

at least one battery for powering the infusion apparatus without substantial interference with the magnetic resonance imaging system;

a system controller positioned external to the shielded room and in communication with the infusion apparatus for controlling the operation thereof; and

a battery charger positioned external to the shielded room for recharging batteries depleted of charge by the injector.

46. The patient infusion system of claim 45 wherein the battery charger is operably associated with the system controller.

47. The patient infusion system of claim 45 wherein the at least one battery is rechargeable.

48. The patient infusion system of claim 45 wherein the infusion apparatus comprises an injector and a control unit.

49. The patient infusion system of claim 48 wherein the injector and the control unit are separate units.

50. The patient infusion system of claim 49 wherein the injector and the control unit are connected by a non-rigid drive connection.

51. The patient infusion system of claim 49 wherein the control unit is remotely positioned from the injector.

52. The patient infusion system of claim 45 wherein the infusion apparatus is adapted to accommodate at least two syringes mounted thereon.

53. The patient infusion system of claim 45 wherein the infusion apparatus and the system controller communicate with each other by means of a communication link disposed therebetween.

54. The patient infusion system of claim 53 wherein the communication link is adapted to be substantially non-reactive with the magnetic field of the imaging system.

55. The patient infusion system of claim 53 wherein the communication link comprises a fiber optic line.

56. The patient infusion system of claim 53 wherein the communication link comprises means for transmitting and receiving electromagnetic energy through a window in the shielded room.

57. The patient infusion system of claim 56 wherein the electromagnetic energy comprises infrared electromagnetic energy.

58. The patient infusion system of claim 56 wherein the electromagnetic energy comprises electromagnetic energy in the visual range.

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59. The patient infusion system of claim 53 wherein the communication link comprises means for transmitting and receiving electromagnetic energy.

60. The patient infusion system of claim 59 wherein the electromagnetic energy comprises infrared electromagnetic energy.

61. The patient infusion system of claim 59 wherein the electromagnetic energy comprises electromagnetic energy in the visual range.

62. The patient infusion system of claim 52 wherein the at least two syringes are operably engaged with at least one drive mechanism of the infusion apparatus.

Status of and Support for the Claims:

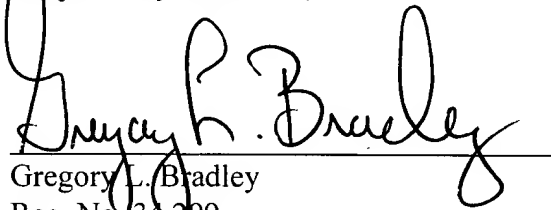
Original claims 1-23 and new claims 24-34 are pending in the application.

New claims 35-62 have been added by this Second Preliminary Amendment.

Applicants submit that new claims 35-62 are supported by the specification, the drawings and the original claims.

Dated: May 24, 2000

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CERTIFICATE OF MAILING

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on May 24, 2000, with sufficient postage as first-class mail in an envelope addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Gregory L. Bradley

